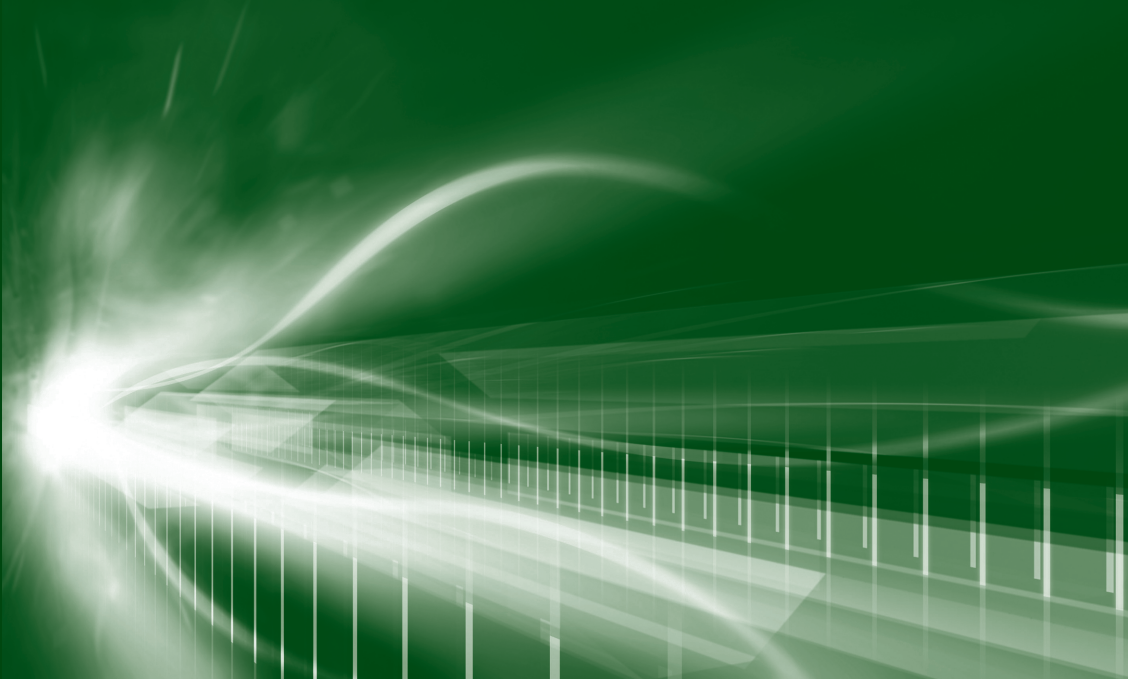

Diesel Particulate Filter (DPF) Information Booklet

TOYOTA

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15/10/2019

Contents

Glossary of Terms

Auto Regeneration: When the soot collected by the DPF reaches a certain level, it triggers a process of fuel injection which increases exhaust temperature. This way, even if the vehicle is not travelling at high speed, the exhaust becomes hot enough to burn off all of the soot which has collected in the DPF.

CO: Carbon monoxide.

DOC: Diesel Oxidation Catalyst.

DPF: Diesel Particulate Filter.

ECM: Engine Control Module.

HC: Hydrocarbons.

Limp Mode: "Limp Mode" occurs when the ECM detects a problem with the vehicle. When a signal value sent by a sensor to the ECM is not within a specified range, the vehicle will switch to "limp mode" and the vehicle's performance will be reduced. This helps protect the vehicle's major components from further damage that could be caused by normal driving. Limp mode is activated to allow the vehicle to be driven home or to the nearest service centre for repairs while reducing the risk of further damage.

Manual Regeneration: When the driver intervenes by triggering the DPF switch, the process of fuel injection increases exhaust temperature. This way a regeneration can occur when stationary. Engine RPM will increase until the exhaust becomes hot enough to burn off all of the soot which has collected in the DPF.

MID: Multi Information Display.

MIL: Malfunction Indicator Lamp.

Non-MID: Vehicles without Multi Information Display.

PM: Particulate Matter (Soot).

PPE: Personal Protection Equipment.

Regeneration: A regeneration is a cycle completed within the DPF to clean the filter of all the accumulated PM.

RPM: Engine speed (Revolutions Per Minute).

W/: With.

W/O: Without.

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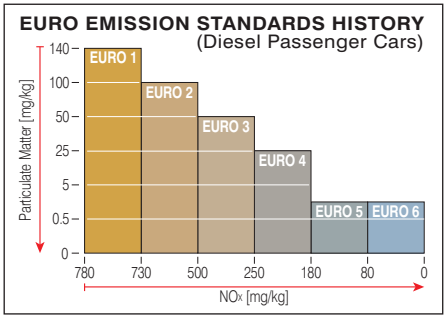
DPF System Introduction

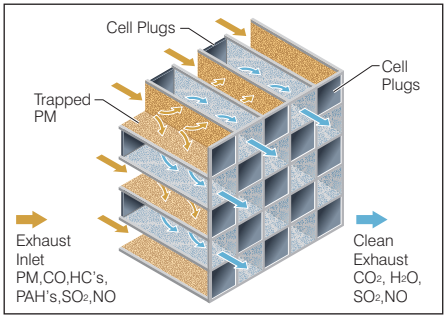
Background

This vehicle is equipped with a DPF. European legislation places increasingly strict exhaust emission targets on all vehicle manufacturers. In November 2016, Australian regulations adopted the EURO 5 standards which require all registered diesel vehicles to be equipped with an emission reduction device. Toyota Australia has adopted the DPF system to meet emission targets.



How a DPF System Works

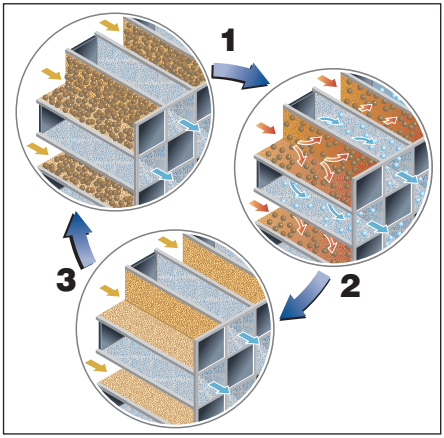
DPF filters trap exhaust gas particulate matter (PM). The DPF is a porous filter material that combusts PM through a combination of filtration and chemical reactions, similar to an oxidation catalyst but at a much higher temperature (over 600°C during the regeneration process). DPF systems (including DOC) can reduce hydrocarbons (HC), carbon monoxide (CO) and PM by up to 90 percent.



DPF System Auto Regeneration Operation

The regeneration process occurs automatically. During regeneration the ECM injects small quantities of fuel into the exhaust after combustion, thereby increasing the temperature within the exhaust system and creating an environment where it is possible to burn off the accumulated PM.

In some cases, the regeneration process may not occur or may be interrupted by certain operating conditions such as low speed, long idle and engine shut down, etc.



1: PM threshold met

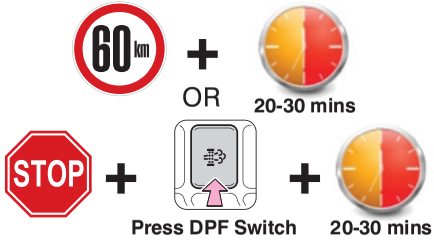
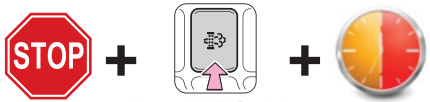
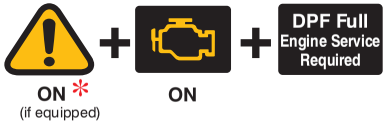
2: DPF regeneration

3: Clean DPF

In most cases the ECM is programmed to recommence the regeneration process again when the vehicle is in motion or the engine is restarted, and the operating temperature has again been reached.

The above-mentioned driving conditions may sometimes not allow the DPF to reach the optimum temperature to complete the DPF regeneration. If this occurs, a manual intervention may be required using the manual regeneration switch.

This vehicle is equipped with a DPF system that is designed to reduce Particulate Matter (PM) in diesel engine exhaust gases by trapping the PM in the DPF. This system performs automatic regeneration to burn off the PM absorbed by the DPF when it reaches a predetermined volume. However, in some situations of low engine temperatures and / or engine speeds, the system will request the driver to perform Manual Regeneration by pressing the DPF switch to perform a specific ❶ or ❷ drive cycle. Refer to the quick reference guide below and the relevant section in the Owners' Manual.

Order of Occurence	DPF WARNING LAMP CONDITION		ACTION REQUIRED
	WITHOUT Multi-Information Display	WITH Multi-Information Display	
❶	 ON	DPF Full See Owner's Manual	Drive vehicle at over 60km/h for approx 30 min. or STOP vehicle in a safe place and perform Manual Regeneration using DPF switch until DPF lamp or message extinguishes. See DPF Warnings. 
❷	 FLASHING		Driver action required. STOP vehicle in a safe place and perform Manual Regeneration or go to the nearest Toyota Dealer for assistance. 
❸			Reduced engine power. Driver action is not possible and vehicle will need to be towed to the nearest Toyota Dealer for assistance. 

✻ A warning buzzer/chime sounds when symbol first appears.

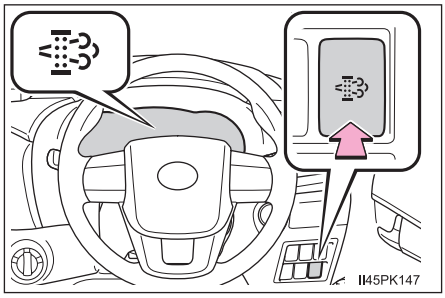
DPF System – Driver Information

Manual Regeneration Operation

All Toyota Diesel models built from June 2018 are equipped with a manual regeneration switch. When activated, this will force a regeneration of the DPF.

Manual regeneration may be required under, but not limited to, the following conditions.

Note: During manual regeneration engine speed may increase up to 2000 rpm.



Auto Regeneration was Unsuccessful

Under certain driving patterns, it may be impossible for the ECM to complete the regeneration procedure. At this point, the DPF will become saturated and a DPF warning lamp will illuminate, or a notification will be displayed on the MID to indicate to the driver to take corrective measures. Further details can be found in the Owner's Manual and this Information Booklet.

Low Speed Driving

When driving at low speeds for extended periods of time, or when driving on short trips (for example, mining and farming, etc.), it may sometimes be difficult for the system to perform automatic regeneration. Therefore, when the DPF light illuminates, it is necessary to perform manual regeneration.

Driving in Long Grass / Vegetation

Where vehicles are to be driven in long dry grass / vegetation environments, it is recommended to perform a manual regeneration prior to commencing. This will ensure maximum operation time before the automatic regeneration start point is triggered or you are able to find a safe location free of any flammable material and complete a manual regeneration.

Method for Performing Manual Regeneration

Step 1: Park the vehicle safely in a well ventilated open space. Shift the transmission into "Park" with the engine running and apply the parking brake.

Step 2: Push the DPF System Switch.

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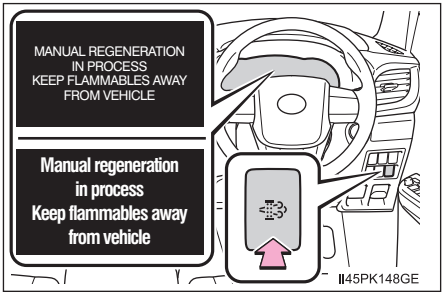
Step 3: The DPF system warning lamp flashes or a warning notification MANUAL REGENERATION IN PROCESS is displayed and the engine idling speed will increase.

Step 4: Regeneration can take up to 20–30 minutes to complete. Once completed the warning notification or DPF lamp will turn off and the engine's idling speed returns to normal.



Caution:
Do not press the accelerator pedal during manual regeneration, as this will cancel the manual regeneration process.

Note: Image is for illustration purposes only and the notifications displayed will vary depending upon the vehicle model.

Hilux / Fortuner / Prado – GD Engine

How Often Will an Automatic Regeneration Occur?

An automatic regeneration will occur approximately every 250 to 300 km depending on driving conditions/style.

How Long Does an Automatic Regeneration Take?

An automatic regeneration can take as long as 20 to 30 minutes depending on driving conditions/style.

Characteristics of a DPF Regeneration

The DPF system may have the following characteristics during a regeneration:

- Idle speed increase to 1200 rpm (M/T) / 900 rpm (A/T) when stationary;
- Noticeable different exhaust smell when compared to a conventional diesel smell;
- A small amount of white smoke may be emitted from the exhaust tail pipe during regeneration. However, this does not necessarily indicate a malfunction;
- A small amount of smoke may be emitted from the underside of the vehicle from small trapped grass / vegetation matter. Refer to "Off Road / Rural Use – Cleaning Procedure" on page 25.

Note: If automatic regeneration operates during engine idle (i.e. vehicle stationary) the engine rpm will be increased up to 1200 rpm. If the vehicle continues to idle without the engine ECM receiving a vehicle speed signal for approximately 5 minutes, or the engine is switched off, the automatic regeneration will be postponed until a vehicle speed signal (i.e. without vehicle driving/moving off again) is received, at which point automatic regeneration will resume.

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DPF System Operation

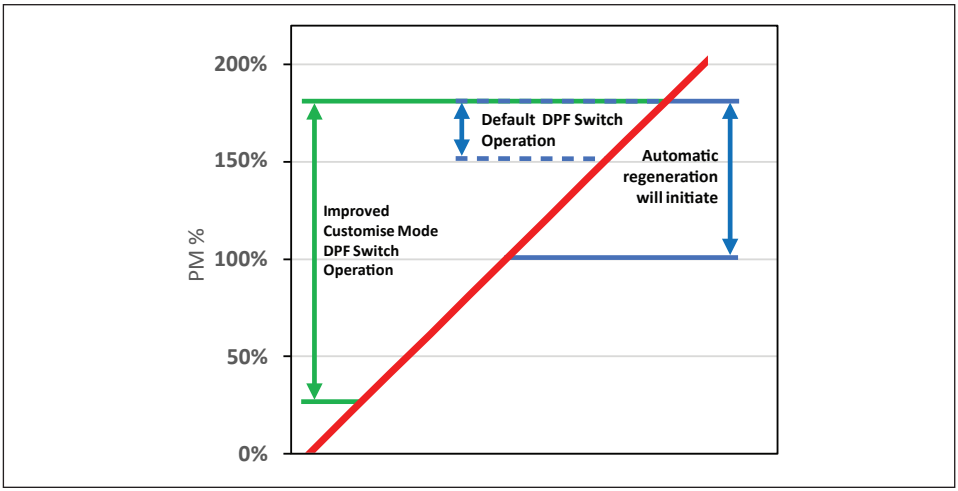
When the system is using the default manufacturer setting, DPF manual regeneration cannot be started by pressing the manual regeneration button unless the level of particulate matter (PM) of approx. 156% PM. Refer Blue area of the graph below.

Custom mode manual regeneration:

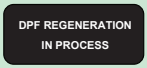
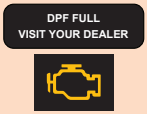
By setting the system to use Customise Mode, DPF manual regeneration can be started at a lower level of PM of approx. 28%. Refer Green area of the graph below.

A warning notification will illuminate to alert the driver of the following stages. See "Warning Notification Matrix" below.

- Manual regeneration available
- Regeneration in progress
- DPF full visit your dealer



Warning Notification Matrix

		Instrument Cluster Type	Warning Description	Warning Notification Image	Driver Action If Required
Normal Operation	Manual Regeneration Available Notification on Start-Up	Without MID	DPF Light illuminates for 5 seconds		No driver action required – normal operation
		With MID	DPF notification appears for 5 seconds		
	Automatic Regeneration Warning Notification	Without MID	DPF Light will flash at 1 second intervals for approx. 20-30 min		
		With MID	DPF notification appears 20-30 min		
Driver Intervention Required	DPF Filter Partially Full – Requires Driver Intervention	Without MID	DPF Light will illuminate		Drive vehicle at over 60 km/h for approx 30 min until DPF lamp or notification in Multi Information Display extinguishes (if equipped)
		With MID	DPF notification will appear		
	DPF Filter Full – Requires Driver Intervention Urgently	Without MID	DPF Light will flash at 0.5 second intervals		STOP in a safe location and perform a manual regeneration
		With MID	DPF Warning notification will appear		
Dealer Intervention Required ASAP	DPF Filter Full Requires Dealer	Without MID	DPF Lights will illuminate	Flashing ON 	Driver action is not possible and vehicle will need to be inspected by the nearest Toyota Dealer
		With MID	DPF Warning notification and EML will appear		

Note: To confirm instrument cluster type please refer to your vehicle Owner's Manual.

Note: Warning notifications can be customised to alert the driver when regeneration is occurring or available. This can be enabled by any Toyota Dealer.

If the malfunction indicator lamp (MIL) illuminates and you continue driving while the DPF system warning light is on or flashing, to reduce the risk of damage to the DPF the ECM will activate limp mode and reduce engine power.

Land Cruiser 70 Series – VD Engine

How Often Will an Automatic Regeneration Occur?

An automatic regeneration will occur approximately every 100 to 150 km depending on driving conditions/style.

How Long Does an Automatic Regeneration Take?

An automatic regeneration can take as long as 20 to 30 minutes depending on driving conditions/style.

Characteristics of a DPF Regeneration

The DPF system may have the following characteristics during a regeneration;

- Idle speed increase to 750 rpm when stationary;
- Noticeable different exhaust smell when compared to a conventional diesel smell;
- A small amount of white smoke may be emitted from the exhaust tail pipe during regeneration. However, this does not necessarily indicate a malfunction;
- A small amount of smoke may be emitted from the underside of the vehicle from small trapped grass / vegetation matter. Refer to "Off Road / Rural Use – Cleaning Procedure" on page 25.

Note: If automatic regeneration operates during engine idle (i.e. vehicle stationary) the engine rpm will be increased up to 750 rpm. If the vehicle continues to idle without the engine ECM receiving a vehicle speed signal for approximately 5 minutes, or the engine is switched off, the automatic regeneration will be postponed until a vehicle speed signal (i.e. without vehicle driving/moving off again) is received, at which point automatic regeneration will resume.

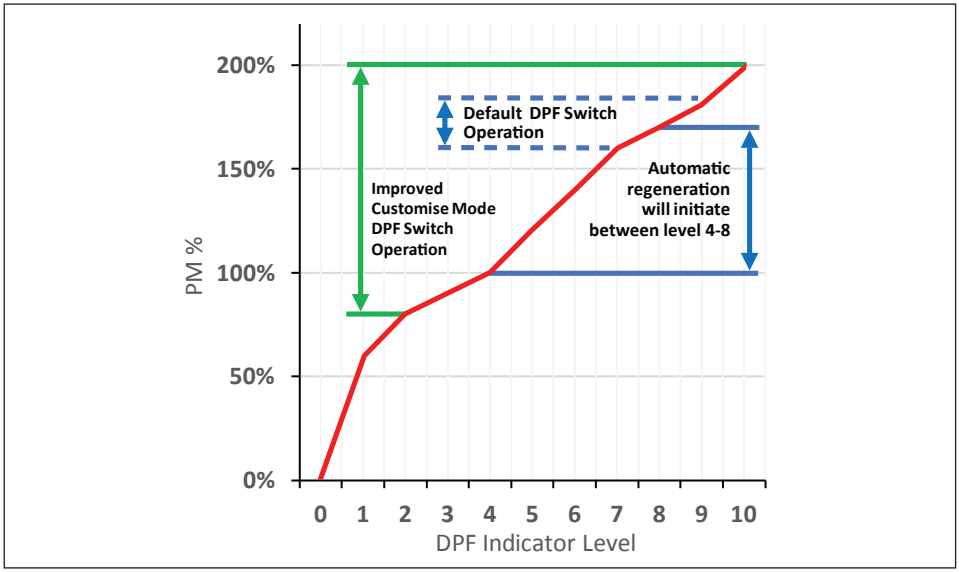
DPF System Operation

When the system is using the default manufacturer setting, DPF manual regeneration cannot be started by pressing the manual regeneration button unless the level of particulate matter (PM) is 7 or higher. Refer Blue area in the graph on the next page.

Custom Mode Manual Regeneration

By setting the system to use Customise Mode , DPF manual regeneration can be started at a lower level PM of 2 or higher. The PM volume is displayed on the combination meter. Refer Green area in the graph on the next page.

Automatic Regeneration will occur every 100 to 150 km at 100% PM level 4 in both default and Custom Mode setting as shown on the next page.



DPF Indicator	DPF PM %	DPF Indicator	DPF PM %
0	0%	6	140%
1	60%	7	160%
2	80%	8	170%
3	90%	9	180%
4*	100%	10	200%
5	120%		
Legend: * Auto Regeneration Start Point			

	Custom Mode	
DPF Switch Operation	OFF	ON
	Level 7 or above	Level 2 or above

Location	DPF PM Indicator
Odometer	dPF 3

15/10/2019

Warning Notification Matrix

		Instrument Cluster Type	Warning Description	Warning Notification Image	Driver Action If Required
Driver Intervention Required	DPF Filter Partially Full – Requires Driver Intervention	All	DPF light will illuminate. DPF level meter = 7		Drive vehicle at over 60 km/h for approx 30 min until DPF lamp or notification in Multi Information Display extinguishes (if equipped)
	DPF Filter Full – Requires Driver Intervention Urgently		DPF light will flash. DPF level meter = 9		STOP in a safe location and perform a manual regeneration
Dealer Intervention Required ASAP	DPF Filter Full Requires Dealer	All	DPF, malfunction and warning light will illuminate. DPF level meter = 10		Driver action is not possible and vehicle will need to be inspected by the nearest Toyota Dealer

Note: Warning notifications can be customised to alert the driver when regeneration is occurring or available. This can be enabled by any Toyota Dealer.

If the malfunction indicator lamp (MIL) illuminates and you continue driving while the DPF system warning light is on or flashing, to reduce the risk of damage to the DPF the ECM will activate limp mode and reduce engine power.

Land Cruiser 200 Series – VD Engine

How Often Will an Automatic Regeneration Occur?

An automatic regeneration will occur approximately every 100 to 150 km depending on driving conditions/style.

How Long Does an Automatic Regeneration Take?

An automatic regeneration can take as long as 20 to 30 minutes depending on driving conditions/style.

Characteristics of a DPF Regeneration

The DPF system may have the following characteristics during a regeneration:

- Idle speed increase to 750 rpm when stationary;
- Noticeable different exhaust smell when compared to a conventional diesel smell;
- A small amount of white smoke may be emitted from the exhaust tail pipe during regeneration. However, this does not necessarily indicate a malfunction;
- A small amount of smoke may be emitted from the underside of the vehicle from small trapped grass / vegetation matter. Refer to "Off Road / Rural Use – Cleaning Procedure" on page 25.

Note: If automatic regeneration operates during engine idle (i.e. vehicle stationary) the engine rpm will be increased up to 750 rpm. If the vehicle continues to idle without the engine ECM receiving a vehicle speed signal for approximately 5 minutes or the engine is switched off, the automatic regeneration will be postponed until a vehicle speed signal (i.e. without vehicle driving/moving off again) is received, at which point automatic regeneration will resume.

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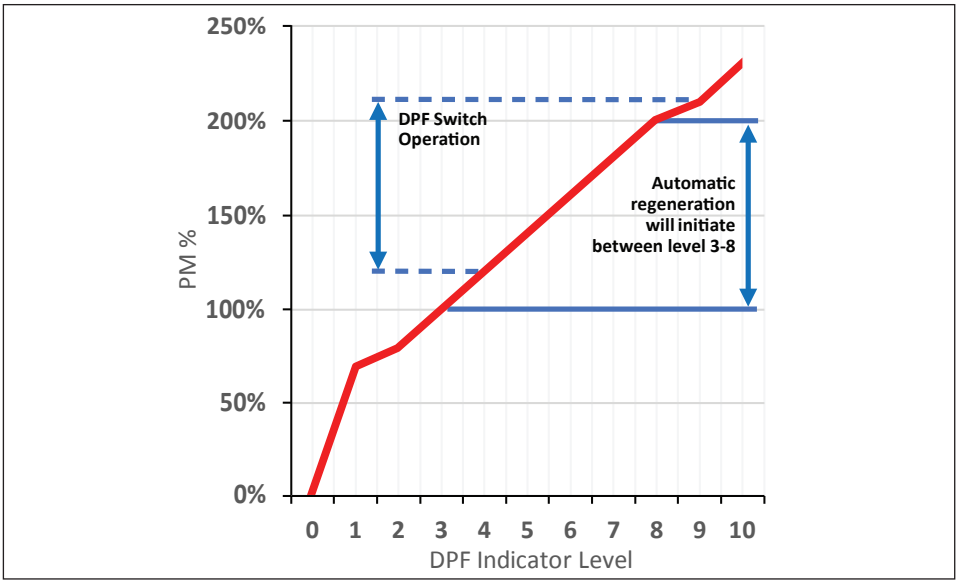
DPF System Operation

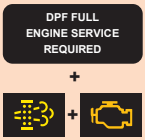
When the system is using the default manufacturer setting, DPF manual regeneration cannot be started by pressing the manual regeneration button unless the level of particulate matter (PM) is 4 or higher.



DPF Indicator	DPF PM %	DPF Indicator	DPF PM %
0	0%	6	160%
1	70%	7	180%
2	80%	8	200%
3*	100%	9	210%
4	120%	10	230%
5	140%		
Legend: * Auto Regeneration Start Point			

Location	DPF PM Indicator
GX – Odometer	dPF 3
Location	**DPF PM Indicator**
GXL, VX, & Sahara – MID	

Warning Notification Matrix

		Instrument Cluster Type	Warning Description	Warning Notification Image	Driver Action If Required
Driver Intervention Required	DPF Filter Partially Full – Requires Driver Intervention	Without MID	DPF light will illuminate / warning notification will illuminate. DPF level meter = 7		Drive vehicle at over 60 km/h for approx 30 min until DPF lamp or notification in Multi Information Display extinguishes (if equipped)
		With MID			
	DPF Filter Full – Requires Driver Intervention Urgently	Without MID	DPF light will flash / warning notification will illuminate. DPF level meter = 9		STOP in a safe location and perform a manual regeneration
		With MID			
Dealer Intervention Required ASAP	DPF Filter Full Requires Dealer	Without MID	DPF light will flash / MIL will illuminate. DPF level meter = 10		Driver action is not possible and vehicle will need to be inspected by the nearest Toyota Dealer
		With MID	DPF light will flash / MIL will illuminate and warning notification will illuminate		

Note: To confirm instrument cluster type please refer to your vehicle Owner's Manual.

If the malfunction indicator lamp illuminates and you continue driving while the DPF system warning light is on or flashing, to reduce the risk of damage to the DPF, the ECM will activate limp mode and reduce engine power.

Hiace and Granvia – GD Engine

How Often Will an Automatic Regeneration Occur?

An automatic regeneration will occur approximately every 200 to 400 km depending on driving conditions/style.

How Long Does an Automatic Regeneration Take?

An automatic regeneration can take as long as 20 to 30 minutes depending on driving conditions/style.

Characteristics of a DPF Regeneration

The DPF system may have the following characteristics during a regeneration:

- Idle speed increase to 1200 rpm when stationary;
- Noticeable different exhaust smell when compared to a conventional diesel smell;
- A small amount of white smoke may be emitted from the exhaust tail pipe during regeneration. However, this does not necessarily indicate a malfunction;
- A small amount of smoke may be emitted from the underside of the vehicle from small trapped grass / vegetation particles. Refer to "Off Road / Rural Use – Cleaning Procedure" on page 25.

Note: If automatic regeneration operates during engine idle (i.e. vehicle stationary) the engine rpm will be increased up to 1200 rpm. If the vehicle continues to idle without the engine ECM receiving a vehicle speed signal for approximately 5 minutes or the engine is switched off, the automatic regeneration will be postponed until a vehicle speed signal (i.e. without vehicle driving/moving off again) is received, at which point automatic regeneration will resume.

DPF System Operation

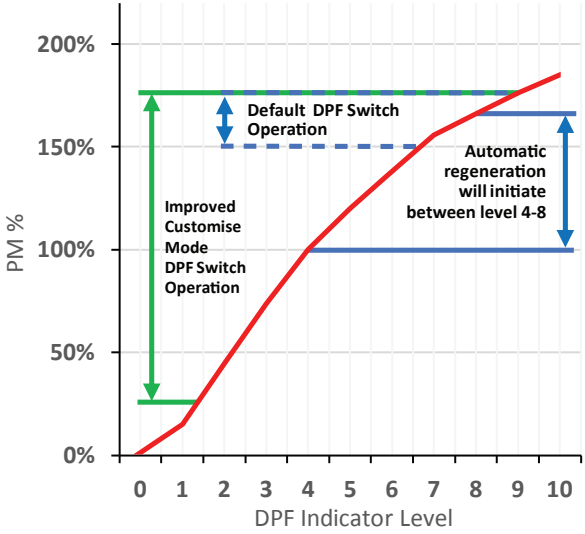
When the system is using the default manufacturer setting, DPF manual regeneration cannot be started by pressing the manual regeneration button unless there is a large volume of particulate matter (PM) approximately 156% PM. Refer to Blue area in the graph on the next page.

Custom Mode Manual Regeneration:

By setting the system to use Customise Mode, DPF manual regeneration can be started at a lower level of PM of approximately 28%. Refer Green area in the graph on the next page.

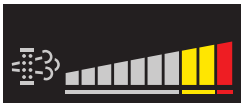
A warning notification will illuminate to alert the driver of the following stages. See "Warning Notification Matrix" on page 19.

- Manual regeneration available
- Regeneration in progress
- DPF full visit your dealer



DPF Indicator	DPF PM %	DPF Indicator	DPF PM %
0	0%	6	138%
1	14%	7	156%
2	44%	8	166%
3	72%	9	176%
4*	100%	10	184%
5	120%		
Legend: * Auto Regeneration Start Point - 100% PM			

	Custom Mode	
DPF Switch Operation	OFF	ON
	Level 7 to 9	Level 2 to 9

Location	DPF PM Indicator
Odometer	

Warning Notification Matrix

		Instrument Cluster Type	Warning Description	Warning Notification Image	Driver Action If Required
Normal Operation	Manual Regeneration Available Notification on Start Up	All	DPF notification appears for 5 seconds	DPF MANUAL REGENERATION AVAILABLE	No driver action required, normal operation.
	Automatic Regeneration Warning Notification		DPF notification appears for 20-30 minutes	DPF REGENERATION IN PROCESS	
Driver Intervention Required	DPF Filter Partially Full – Requires Driver Intervention	All	DPF notification will appear	DPF FULL SEE OWNERS MANUAL	Drive vehicle at over 60 km/h for approx 30 mins until DPF lamp or notification in Multi Information Display extinguishes (if equipped)
	DPF Filter Full – Requires Driver Intervention Urgently		DPF warning notification will appear	DPF FULL VISIT YOUR DEALER	STOP in a safe location and perform a manual regeneration
Dealer Intervention Required ASAP	DPF Filter Full Requires Dealer	All	DPF lights will illuminate	DPF FULL VISIT YOUR DEALER + 	Driver action is not possible and vehicle will need to be inspected by the nearest Toyota Dealer

Note: Warning notifications can be customised to alert the driver when regeneration is occurring or available. This can be enabled by any Toyota Dealer.

If the malfunction indicator lamp (MIL) illuminates and you continue driving while the DPF system warning light is on or flashing, to reduce the risk of damage to the DPF the ECM will activate limp mode and reduce engine power.

Hiace – KD Engine

How Often Will an Automatic Regeneration Occur?

An automatic regeneration will occur approximately every 150 to 200 km depending on driving conditions/style.

How Long Does an Automatic Regeneration Take?

An automatic regeneration can take as long as 20 to 30 minutes depending on driving conditions/style.

Characteristics of a DPF Regeneration

The DPF system may have the following characteristics during a regeneration:

- Idle speed increase to 1050 rpm (M/T) / 750 rpm (A/T in drive) / 1050 rpm (A/T in neutral) when stationary;
- Noticeable different exhaust smell when compared to a conventional diesel smell;
- A small amount of white smoke may be emitted from the exhaust tail pipe during regeneration. However, this does not necessarily indicate a malfunction;
- A small amount of smoke may be emitted from the underside of the vehicle from small trapped grass / vegetation particles. Refer to "Off Road / Rural Use – Cleaning Procedure" on page 25.

Note: If automatic regeneration operates during engine idle (i.e. vehicle stationary) the engine rpm will be increased up to 750 rpm. If the vehicle continues to idle without the engine ECM receiving a vehicle speed signal for approximately 5 minutes or the engine is switched off, the automatic regeneration will be postponed until a vehicle speed signal (i.e. without vehicle driving/moving off again) is received, at which point automatic regeneration will resume.

DPF System Operation

When the system is using the default manufacturer setting, DPF manual regeneration cannot be started by pressing the manual regeneration button unless the level of particulate matter (PM) is 7 or higher. Refer to Blue area in the graph on the next page.

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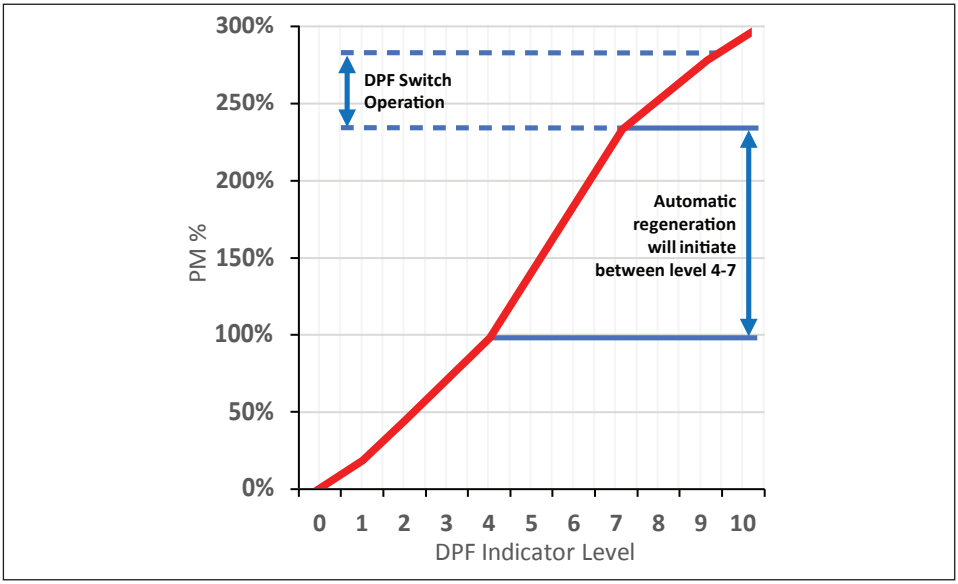

DPF Indicator	DPF PM %	DPF Indicator	DPF PM %
0	0%	6	188%
1	18%	7	232%
2	46%	8	256%
3	72%	9	278%
4*	100%	10	269%
5	144%		
Legend: * Auto Regeneration Start Point			

Location	DPF PM Indicator
Instrument Cluster	

Warning Notification Matrix

		Instrument Cluster Type	Warning Description	Warning Notification Image	Driver Action If Required
Driver Intervention Required	DPF Filter Partially Full – Requires Driver Intervention	All	DPF light will illuminate. DPF level meter = 7		Drive vehicle at over 60 km/h for approx 30 min until DPF lamp or notification in Multi Information Display extinguishes (if equipped)
	DPF Filter Full – Requires Driver Intervention Urgently		DPF light will flash. DPF level meter = 9		STOP in a safe location and perform a manual regeneration
Dealer Intervention Required ASAP	DPF Filter Full Requires Dealer	All	DPF light, MIL and warning light will illuminate. DPF level meter = 10		Driver action is not possible and vehicle will need to be inspected by the nearest Toyota Dealer

If the malfunction indicator lamp illuminates and you continue driving while the DPF system warning light is on or flashing, to reduce the risk of damage to the DPF, the ECM will activate limp mode and reduce engine power.

Coaster Bus – N04C Engine

How Often Will an Automatic Regeneration Occur?

An automatic regeneration will occur approximately every 200 to 250 km depending on driving conditions/style.

How Long Does an Automatic Regeneration Take?

An automatic regeneration can take as long as 20 to 30 minutes depending on driving conditions/style.

Characteristics of a DPF Regeneration

The DPF system may have the following characteristics during a regeneration;

- Idle speed increase to 1200 rpm when stationary;
- Noticeable different exhaust smell when compared to a conventional diesel smell;
- A small amount of white smoke may be emitted from the exhaust tail pipe during regeneration. However, this does not necessarily indicate a malfunction;
- A small amount of smoke may be emitted from the underside of the vehicle from small trapped grass / vegetation matter. Refer to "Off Road / Rural Use – Cleaning Procedure" on page 25.

Note: If automatic regeneration operates during engine idle (i.e. vehicle stationary) the engine rpm will be increased up to 1200 rpm. If the vehicle continues to idle without the engine ECM receiving a vehicle speed signal for approximately 5 minutes or the engine is switched off, the automatic regeneration will be postponed until a vehicle speed signal (i.e. without vehicle driving/moving off again) is received, at which point automatic regeneration will resume.

Warning Notification Matrix

	Warning Description	Warning Notification Image	Driver Action If Required
Driver Intervention Required	DPF light will flash for more than 10 seconds		Drive vehicle at over 60 km/h for approx 30 min until DPF lamp or notification in Multi Information Display extinguishes (if equipped)
	DPF light will flash with warning buzzer		STOP in a safe location and perform a manual regeneration
Dealer Intervention Required ASAP	MIL will illuminate and limp home mode is activated		Driver action is not possible and vehicle will need to be inspected by the nearest Toyota Dealer

If the malfunction indicator lamp illuminates and you continue driving while the DPF system warning light is on or flashing, to reduce the risk of damage to the DPF, the ECM will activate limp mode and reduce engine power.

Off Road / Rural Use – Cleaning Procedure

Under Vehicle Cleaning Procedure

This customer information is prepared for Toyota commercial vehicle owners and drivers that operate in long grass / vegetation environments.

When driving in long grass / vegetation environments, the possibility exists that accumulation of this vegetation may occur at the vehicle's under-body in the vicinity of the exhaust.

The exhaust / DPF system operates at high temperature during the regeneration cycle. If operation in the above-mentioned environments are unavoidable, it is recommended that periodic under-body inspections for accumulated grass and vegetation are conducted and removed prior to this cycle.

Additional information is available in the vehicle's Owner's Manual.

Cleaning Procedure

Personal Protective Equipment (PPE)

- Safety Glasses
- Gloves (heat resistant)
- Ground Sheet

Preparation Prior to Cleaning

Park vehicle on a hard level environment clear of any obstructions/traffic.

- Allow the vehicle to cool down for a minimum of 1 hour to reduce the risk of any injuries.
- Ensure the vehicle is in the following condition:
  - Engine: Off
  - Parking Brake: On
  - Chock wheels
  - Correct gear position:

    Automatic transmission: Park position

    Manual transmission: Neutral position

Inspection/Cleaning Procedure

- Wear the correct PPE
- Place ground sheet under the vehicle if required
- Inspect the underside of the vehicle for grass / vegetation accumulation near or around the vehicle's exhaust system. See example on the next page.

- If grass / vegetation accumulation is observed, this will need to be removed by hand
- Remove any accumulation from near or around the vehicle's exhaust system

CAUTION:
Be careful of sharp edges around the vehicle's under-body components such as exhaust heat shields.

Be careful of burns from the vehicle's under-body high temperature components such as the exhaust system.

Note: Ensure all foreign material has been removed prior to driving the vehicle.

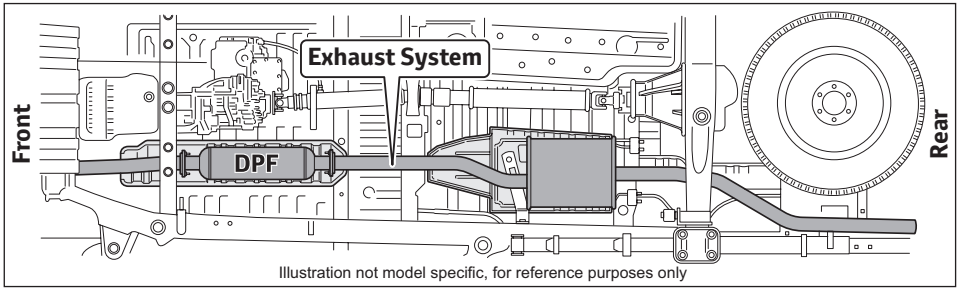

Illustration not model specific, for reference purposes only

Questions and Answers

What Engine oil should I use?

Toyota recommends using Genuine Low-Ash engine oil.

Vehicle	Oil Grade	Viscosity
All Vehicles equipped with DPF	ACEA C2	SAE 0W-30
Coaster (Euro 5)	API CH-4 / CJ-4	SAE 15W-30

What is the best fuel quality for efficient DPF operation?

Ensure only low sulphur diesel is used (Sulphur content 10 ppm or lower).

Do I need to replace the diesel particulate filter during normal servicing?

No. DPF's do have a capacity limit and can become full. Unlike traditional air, oil or pollen filters that need to be replaced at regular intervals, the DPF has a much longer service life and is designed to be regenerated to restore its performance. The vehicle's Electronic Control Module (ECM) is programmed to do this automatically, neutralising the PM by burning it off at high temperatures within the exhaust system while the vehicle is running. From Euro 5 onwards all modern diesel engines follow this type of regeneration procedure.

How can I ensure the DPF regeneration process is completed successfully?

a. For vehicles where custom mode has not been enabled, drive the vehicle continuously at a sustained speed (e.g. around 60 km/h or above for 20 to 30 minutes).

b. For vehicles where custom mode has been enabled, an indicator will inform the driver that a DPF burn is being performed. Drive the vehicle continuously at a sustained speed (e.g. around 60 km/h or above for 20 to 30 minutes until indicator is extinguished).

What will happen if I don't do anything about the DPF warning light/notifications not going out?

The warning light/notifications are there to either notify you to keep driving until a regeneration is achieved, or to warn you the vehicle is not able to complete an automatic regeneration. If you continue driving, the DPF will continue to fill with soot and a limp mode will be activated. Auto and manual regeneration will no longer be available at this point and you will need to present your vehicle to any Toyota Dealer.

Ultimately the exhaust gases will struggle to travel through the DPF and it will become blocked. An overfull DPF burns too hot and can melt the filter. This is why the engine prevents it from regenerating when it is too full as it may eventually block to the point the engine can no longer continue to run.

What if the DPF auto regeneration processes has been unsuccessful?

In certain driving patterns, it may be impossible for the ECM to complete the regeneration procedure. At this point, the DPF will become saturated and a DPF warning lamp or notification will be displayed on the MID to indicate the driver to take corrective measures. Further details can be found in the relevant model page of this DPF Information Booklet.

If further assistance is required, please contact any Toyota Dealer.

Will my DPF cause a fire?

No, the regeneration process will not cause a fire if the operation is done in a safe manner as per the DPF warnings.

High temperature exhaust gas is discharged and the exhaust pipe reaches high temperatures which has the potential to cause a fire. Move the vehicle to a safe place before DPF regeneration is performed. Refer to “DPF Warnings” on page 29.

15/10/2019

DPF Warnings

Observe the following warnings. Failure to do so may result in serious injury such as burns caused by the hot exhaust pipe and gases or may cause a fire.

General Warnings

- Do not drive the vehicle over, or stop the vehicle near, flammable materials. The exhaust system and exhaust gases can be extremely hot. These hot components may cause a fire if there is any flammable material nearby.
- Keep people and combustible materials away from the exhaust pipe while the engine is running. The exhaust gas is very hot.
- Do not idle or park the vehicle where flammable materials such as grass, leaves, paper or rags might burn easily.
- Do not pull- or push-start the vehicle, it may damage the vehicle or cause a collision when the engine starts. The catalytic converter may overheat and become a fire hazard.
- Make sure there are no people near the exhaust pipe.
- Do not use fuel and engine oil other that the specified / recommended type.
- Do not modify the vehicle exhaust.
- Remove grass / vegetation from the underside of the vehicle, following the removal procedure. Refer to “Off Road / Rural Use – Cleaning Procedure” on page 25.
- Ensure the engine has been shut down and is allowed to cool prior to any maintenance work being performed.

Manual Regeneration Warnings

- Do not perform regeneration when the vehicle is in an enclosed area, such as a garage, etc.
- Do not touch the exhaust pipe and exhaust gases during the regeneration.
- The DPF switch (manual regeneration process) may not operate when the vehicle is higher than 4000 m (13,123 ft) above sea level.
- Do not drive for long periods of time while the following are illuminated, have your vehicle inspected by your Toyota Dealer immediately:
  - W/ MID: DPF system warning notification ‘DPF FULL Visit Your Dealer’ appears on the display.
  - W/O MID: DPF indicator malfunction light is flashing and/or accompanied with the malfunction indicator lamp (MIL).

- Remove grass / vegetation from the underside of the vehicle by following the removal procedure. Refer to "Off Road / Rural Use – Cleaning Procedure" on page 25

Off Road and Rural Use

Where vehicles are driven in long dry grass / vegetation environments, Toyota recommends that you regularly check the underside of the vehicle. Remove any grass or vegetation which may have accumulated around the vehicle's under-body components, especially the exhaust/DPF system, which may cause a fire due to increased temperature from regeneration.

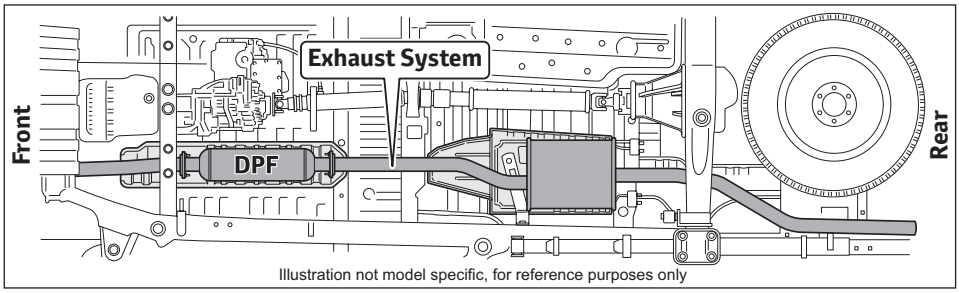

Illustration not model specific, for reference purposes only

This DPF Information Booklet covers models:
Fortuner / Hilux / Prado with 1GD-FTV diesel engine,
Hilux with 2GD-FTV diesel engine,
Land Cruiser 200 & 70 Series with 1VD-FTV diesel engine,
Hiace and Granvia with 1GD-FTV diesel engine,
Hiace with 1KD-FTV diesel engine,
Coaster Bus with N04C diesel engine.

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